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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

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09/891925
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US005945692A

United States Patent [19]

Yano et al.

[11] Patent Number: 5,945,692
[45] Date of Patent: *Aug. 31, 1999

[54] SEMICONDUCTOR DEVICE AND METHOD OF FABRICATING SAME

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[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

[21] Appl. No.: 08/432,812

[22] Filed: May 2, 1995

[30] Foreign Application Priority Data

May 31, 1994 [JP] Japan 6-118386 P

[51] Int. Cl.⁶ H01L 29/74[52] U.S. Cl. 257/139; 257/212; 257/401;
257/630; 257/646; 257/649[58] Field of Search 257/139, 212,
257/341, 401, 630, 646, 649

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[57]

ABSTRACT

There is disclosed a semiconductor device having an MOS gate for reducing variations in threshold voltage (V_{th}) with time wherein a surface protective film is not formed in a device area including channels but only in a device peripheral area, thereby reducing the amount of hydrogen atoms migrating to a silicon-silicon oxide interface in a cell area and, accordingly, reducing the number of Si—H chemical bonds at the interface.

22 Claims, 11 Drawing Sheets

